City and County of San Francisco
Department of City Planning

450 McAllister Street
San Francisco, CA 94102

ADMINISTRATION
(415) 558-6414 / 558-6411
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NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: January 29, 1988

Lead Agency: City and County of San Francisco, Department of City Planning
450 McAllister Street San Francisco, CA 94102

Agency Contact Person: Catherine Bauman Telephone: (415) 558-6392

Project Title: Underwater World at Pier 39

Project Sponsor: Pier 39 Limited Partnership, ERA Equities, Questar Corporation

Project Contact Person: Fritz Arco, Pier 39

Project Address: Pier 39 at the Embarcadero

City and County: San Francisco

Project Description: The project is the amendment of the Conditional Use authorization which permitted the development of Pier 39 (City Planning Resolution 7551). The amendment would permit the construction of a 37,000 square foot public aquarium at the southeast corner of Pier 39. A more detailed project description is included in the attached Initial Study.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Section 15063 (Initial Study), 15064 (Determining Significant Effect), and 15065 (Mandatory Findings of Significance), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: February 8, 1988 .

An appeal requires: 1) a letter specifying the grounds for the appeal, and;
2) a $50.00 filing fee.

Barbara W. Sahm
BARBARA W. SAHM
Environmental Review Officer

BWS:CVB:eh
OER:10

5/S

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UNDERWATER WORLD AQUARIUM
INITIAL STUDY
January 29, 1988

1. PROJECT DESCRIPTION

The proposed project would be an aquarium and educational facility built on piles over the Bay in the Pier 39 marina and attached to the existing Pier 39 development, which consists of approximately 196,000 sq.ft. of small scale retail and restaurant uses, a waterfront park and a 1,000-car garage. The proposed aquarium site is located east of Fisherman's Wharf, fronting on The Embarcadero (see Figure 1, page 2).

Approximately 22,000 square feet of the 39,600 square foot building site currently contains a video game parlor and bumper car facility, part of the existing Pier 39 development. The remainder of the building site (17,600 square feet) would be constructed on new piles in the Pier 39 marina. Part of the amusement facility and the bumper cars would be removed as would about sixteen boat slips in the marina. Pier 39 would continue to be occupied by small scale retail and restaurant uses.

The proposed aquarium would contain a total of 37,000 gross square feet (gsf) of floor area as defined by the City Planning Code, including 7,500 gsf of lobby/public circulation space, 2,000 gsf of retail gift shop space, exhibit area of 2,500 gsf and an 8,400 gsf aquarium tank (see Figures 2, 3, 4 and 5, pages 3, 4, 5 and 6). There would be about 4,500 gsf of service area and 12,100 gsf of general public ancillary space (toilets, mechanical, etc.).

The main entrance to the aquarium would be from The Embarcadero, in front of Pier 39 but outside the main entrance to the pier. Visitors would enter the facility and pass through an educational exhibit (a tide pool display) prior to entering the aquarium tank. Visitors would exit at the main entrance.

The project would not involve the construction of new parking spaces. There would be an off-street pedestrian drop-off zone for vehicles and buses in front of the aquarium. This drop-off zone would also serve visitors to the remainder of Pier 39 and other Northern Waterfront attractions, parks and promenades.

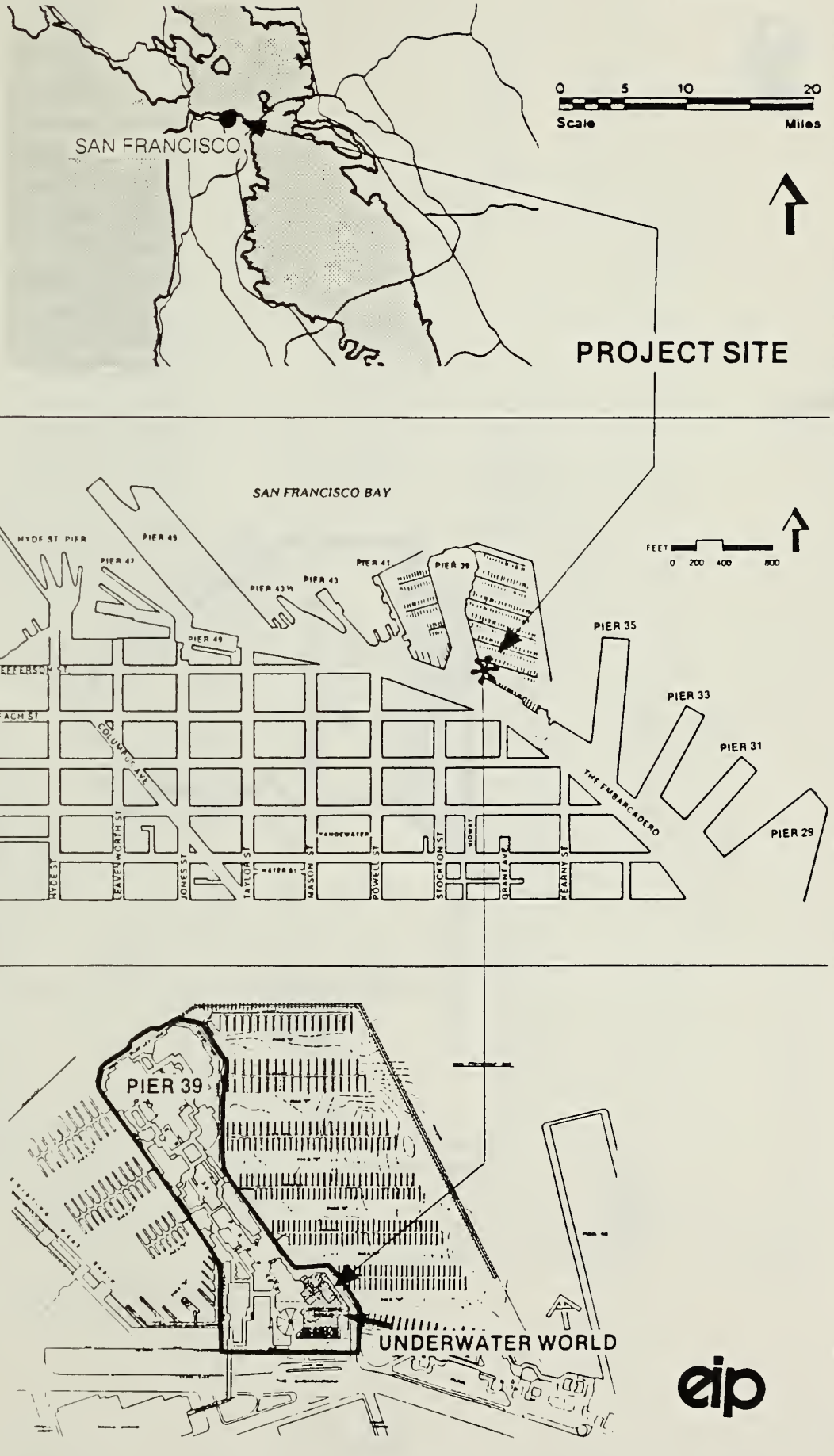
D REF 711.57 Un2

Underwater World
aquarium, initial study
1988.

SITE LOCATION MAP

FIGURE 1

SOURCE EIP ASSOCIATES



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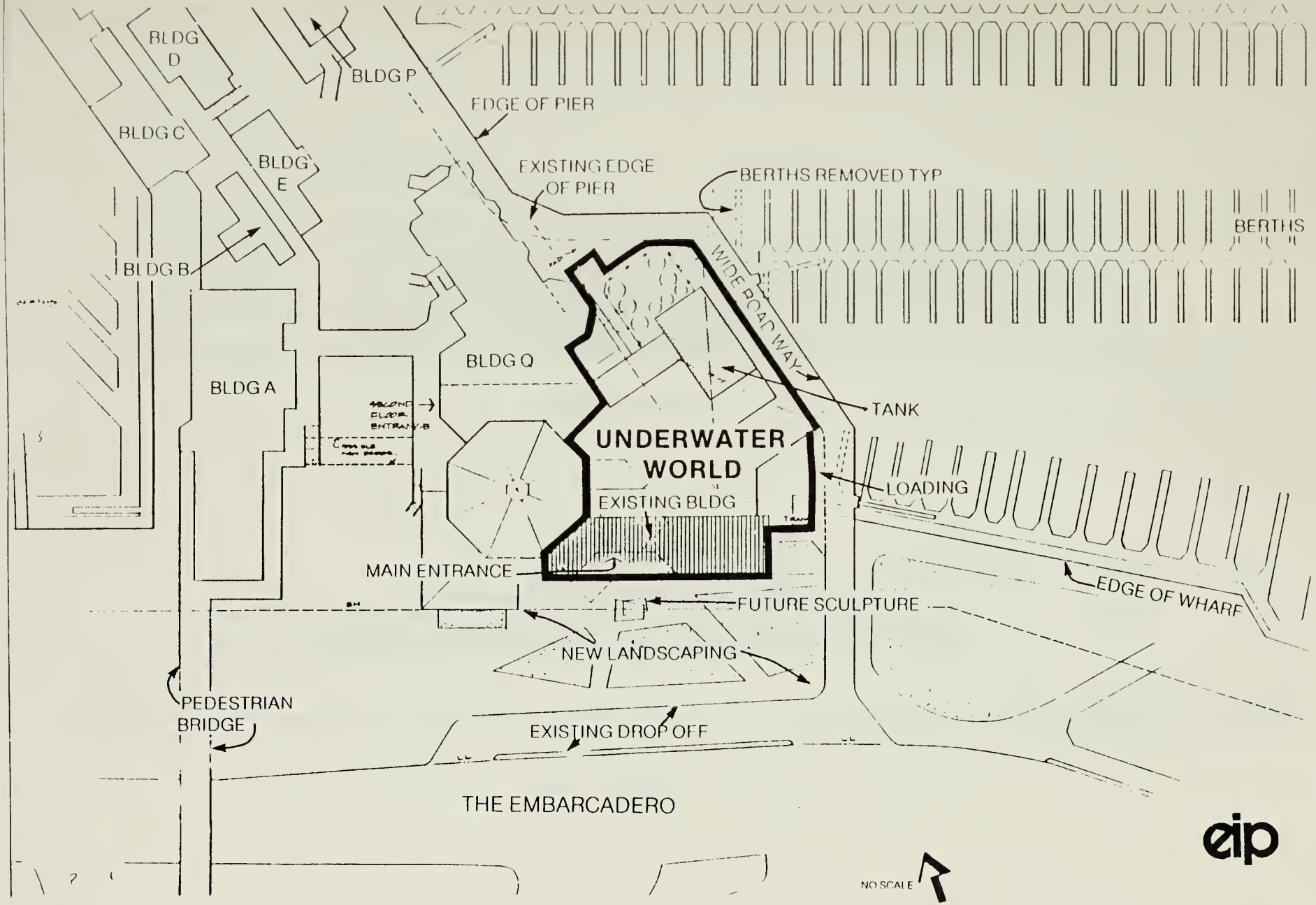
SITE PLAN

FIGURE 2

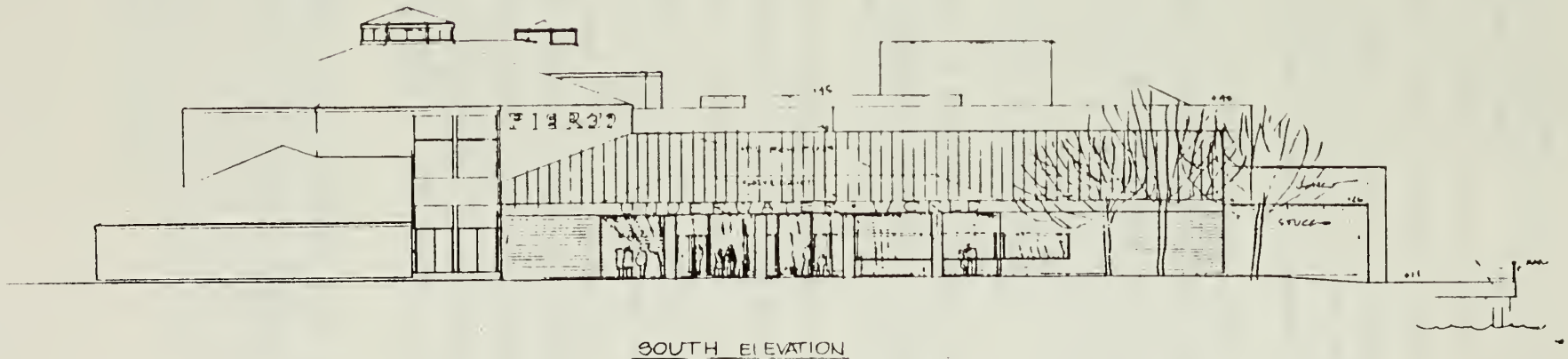


SOUTH AND EAST ELEVATIONS

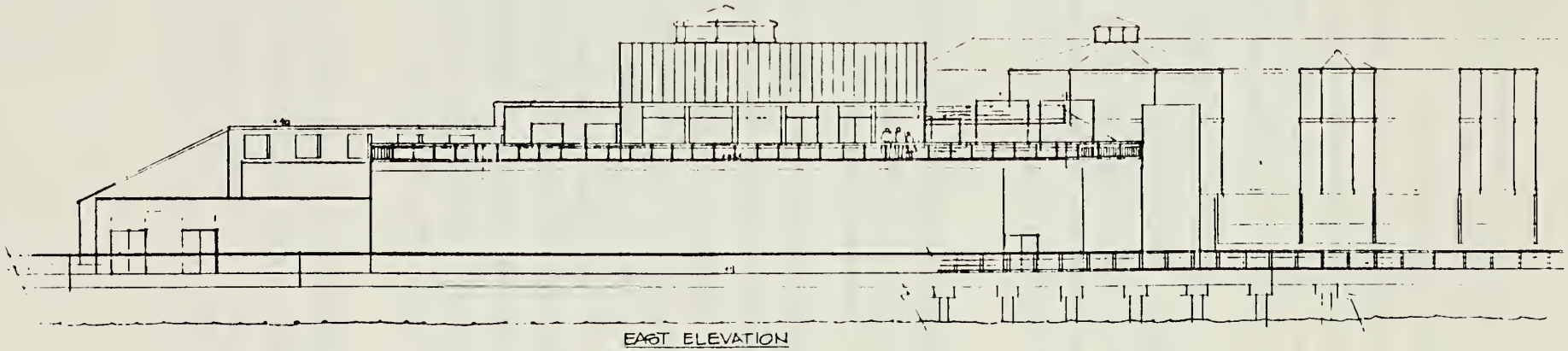
FIGURE 3

SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE



SOUTH ELEVATION



EAST ELEVATION

The aquarium tank would contain approximately 750,000 gallons of salt water drawn from the Bay and filtered through a set of pressure filtration tanks. The circulation system would be cold-water (at Bay temperature) and semi-closed. A semi-closed system allows the aquarium water to be gradually released and replaced while being continuously circulated and filtered. A moveable walkway would carry visitors through an acrylic tunnel passing through the interior of the aquarium tank. The aquarium would contain approximately 2,000 fish which are indigenous to the Bay Area and Northern California.

The first story of the proposed project would contain approximately 22,000 gsf of area including the lobby, main tanks, gift shop, tidal pool, and mechanical rooms. A partial mezzanine would contain 2,000 gsf. The second story of the project would contain approximately 10,000 gsf of administrative offices, a function room (for education groups, post conference groups, etc.), public spaces and staff spaces. An area of 3,000 gsf would be provided on the roof for mechanical use.

The platform of Pier 39 would be extended to the east and would contain about 17,600 gsf for the proposed building and new deck. Continued access would be provided to the public and emergency vehicles around the entire Pier 39 development from The Embarcadero.

The project sponsors anticipate completion of the project design by mid-1988. Construction would commence once permits were issued. The project would take approximately 14 months to construct and three months to prepare the fish tank for occupants. The uncompleted portion of the northern waterfront park improvements by Pier 39, along the Embarcadero east of Pier 39 (which was required as a condition of approval of the construction of recent Pier 39 improvements), would be used as a staging area for the project. Once the proposed project is completed, the entire park would be constructed. The project sponsors estimate construction costs of $12,000,000. The project sponsors are the Pier 39 Limited Partnership, ERA Equities of San Francisco, and Questar Corporation of Auckland, New Zealand. The project architects are Esherick, Homsey, Dodge and Davis.

The project would require permits from the Bay Conservation and Development Commission, the U.S. Army Corps of Engineers and the Port of San Francisco in addition to an amendment to the previous Pier 39 Conditional Use Authorization from the City Planning Commission (CPC Resolution 7551). A permit from the Regional Water Quality Control Board might be required.

2. SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS

A. EFFECTS FOUND TO BE POTENTIALLY SIGNIFICANT

The proposed Underwater World project is examined in this Initial Study to identify potential effects on the environment. Some of the effects that would be generated by the proposed project, either on a project-specific basis or cumulatively, have been determined to be potentially significant and will be analyzed in an Environmental Impact Report. Other impacts would not be significant, but will be included in the EIR for informational purposes. The EIR will cover land use and zoning including bay fill; relationship of the proposed buildings to the adopted environmental plans and goals; visual quality; transportation; construction noise; air quality - project operation and traffic; water quality/marine biology; and geology/topography

B. EFFECTS FOUND NOT TO BE SIGNIFICANT

The following environmental effects would either be insignificant or mitigated to insignificant levels by measures incorporated into the project design. These require no further environmental analysis and will not be addressed in the EIR.

Light and Glare. The proposed project would not generate any light or glare impacts on other properties.

Population. The proposed project would not displace large numbers of employees or any residents, and would not create a significant demand for housing.

Operational Noise. The proposed project would not be affected by ambient noise levels due to the inclusion of noise insulation features in the project designs. Project operation, including traffic generated by the project, would not significantly increase the ambient noise levels in the project vicinity.

Construction-Generated Air Quality. Construction activities may cause a temporary increase in localized particulate levels; a measure to reduce emissions generated during construction activities is included in the proposed project.

Odors. Construction of the proposed project would not create objectionable odors or involve burning of any materials.

Shadows. The proposed project would not generate significant shadow impacts on streets and sidewalks around the site. At no time would the proposed project cast any shadow on an open space protected under Proposition K.

Wind. The proposed project would not generate significant wind impacts at pedestrian levels.

Utilities/Public Services. Increased demand for public services and utilities attributable to the proposed project would not require additional personnel or equipment and would be too small to make a noticeable contribution to cumulative service demands.

Endangered Species. The proposed project would not affect any rare or endangered species or habitats.

Water Supply. The proposed project would not affect a public water supply, nor would it affect ground water. The project would not result in flooding, erosion or siltation.

Energy. The proposed project would be constructed to conform with the energy requirements of Title 24. The project would not encourage activities that would result in the wasteful use of energy or have a substantial effect on a natural resource.

Hazards. The proposed project would not be affected by hazardous uses or health hazards in the area, nor would the proposed project create potential health hazards. Evacuation and emergency response plans would be developed by the project sponsor.

Cultural. The project would not result in the demolition of any historic structures and since it is being built over the Bay, would not involve excavation of any potential historic artifacts. An archaeological report was conducted for the project site in which it was determined that it is very unlikely that prehistoric remains would be disturbed during construction.

3. ENVIRONMENTAL SETTING

3.1 COMPATIBILITY WITH EXISTING ZONING

A. COMPATIBILITY WITH EXISTING ZONING AND PLANS

	Not Applicable	Discussed
1. Discuss any variances, special authorizations, or changes proposed to the City Planning Code or Zoning Map, if applicable.	____	X
*2. Discuss any conflicts with any adopted environmental plans and goals of the City or Region, if applicable.	____	X

Zoning

The proposed project is located in the C-2 (Community Business) District. The site is also in the Northern Waterfront Special Use District No. 1. This Special Use District was created by the City to protect the unique maritime character of the area and to promote operations related to water-borne commerce or navigation as the principal uses in the area. Because the project is not directly related to the conduct of waterborne commerce or navigation, it would require an amendment of Pier 39's Conditional Use authorization by the City Planning Commission (Section 240 of the City Planning Code). A public aquarium would be permitted in the C-2 District under Section 221 of the City Planning Code (Assembly and Entertainment Uses).

The floor area ratio (FAR) for the C-2 District is 3.6:1. However, the Northern Waterfront Special Use District No. 1 permits a higher maximum FAR of 5.0:1. The project would have an FAR of 0.93:1, less than the maximum allowable 5.0:1. The project site is located in a 40-X Height and Bulk District, where the allowable building height is 40 feet and there are no bulk requirements unless the average slope of the site is greater than 5%. The average slope is less than five percent for the project site. The project would rise to 40 feet above the street and would comply with all of the requirements of the 40-X Height and Bulk District. For this project, Section 151 of the City Planning Code would require provision of 74 parking spaces. The City Planning Commission will consider parking adequacy when it considers the proposed amendment of Pier 39's Conditional Use Authorization.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

Under Section 152 of the City Planning Code, one freight loading space would be required for this project. One freight loading space, which meets the minimum required dimensions under Section 154, would be provided.

Relationship to the Master Plan and Other Planning Documents

The relationship of the proposed project to the policies of the Master Plan, and other adopted environmental plans and goals will be analyzed in the EIR.

3.2 ENVIRONMENTAL EFFECTS

LAND USE

	Yes	No	Discussed
1. Land Use. Could the project:			
*a. Disrupt or divide the physical arrangement of an established community?	___	X	X
b. Have any substantial impact upon the existing character of the vicinity?	___	X	X

The proposed project site is located in San Francisco in the Northern Waterfront District near Fisherman's Wharf. This area has been dominated in the recent past by a combination of maritime-oriented commercial uses such as fish processing and other uses serving the San Francisco commercial fishing fleet, primarily on Piers 41 through 45 and the Hyde Street pier, and tourist-serving uses, including hotels, specialty retail complexes (i.e. Pier 39) and entertainment establishments. To the southeast of the project site, in the Base of Telegraph Hill area, there has been development of higher-intensity office and residential uses compared to previous development in recent years.

Uses within two to three blocks of the proposed aquarium site consist mainly of the Pier 39 specialty retail complex, parking lots and garages, hotel and residential buildings, and other Pier buildings. The Pier 39 parking garage is located across the Embarcadero. Directly to the north, in the Bay, is the Pier 39 marina with slips for 360 boats.

The proposed aquarium site is currently occupied by a portion of the Pier 39 complex and a portion of the Pier 39 marina. The remainder of Pier 39 is occupied by the Pier 39

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

complex. The existing character of the vicinity of the project would not change in type of development but would experience an increased intensity of development.

Although the aquarium would be the first of its type in the project area, it would represent continued commercial activity on the project site and in the project area. The project would not disrupt or divide the physical arrangement of the existing community. The project would involve the creation of new Bay fill, as defined by the Bay Conservation and Development Commission (BCDC). BCDC will provide input as to the significance of this impact on the Bay. These issues will be discussed in the EIR.

	Yes	No	Discussed
2. Visual Quality. Could the project:			
*a. Have a substantial, demonstrable negative aesthetic effect?	___	X	X
b. Substantially degrade or obstruct any scenic view or vista now observed from public areas?	X	___	X
c. Generate obtrusive light or glare substantially impacting other properties?	___	X	X

The proposed project would be similar in height to the existing Pier 39 development, but would represent an increase in height on the project site. The project would result in a loss of open area on the undeveloped portion of the site. The bulk of the project would be similar to that of the rest of Pier 39, but would be smaller than other recently-built retail and office structures to the south and east.

The proposed project would block some views of the Bay from the Embarcadero and from sidewalks along Grant and Beach Streets. The project would not block any other views of the Bay or other points of interest from public open space areas. Since the proposed project would not be higher than some of the existing development in the project area, it would not become a visible part of the City skyline. These issues will be further analyzed in the EIR.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The proposed project would not include any reflective glass and would not cause any glare impacts on nearby pedestrians or autos. See Mitigation Measures, page 25. This issue will not be discussed further in the EIR.

	Yes	No	Discussed
3. Population. Could the project:			
*a. Induce substantial growth or concentration of population?	___	X	X
*b. Displace a large number of people (involving either housing or employment)?	___	X	X
c. Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply?	___	X	X

The proposed project would not result in a reduction in the number of employees in the existing amusement facility at Pier 39.[1] It is estimated that the proposed project would generate employment for approximately 45 workers, primarily in commercial service, aquarium maintenance and building maintenance. The maximum potential patronage of the aquarium would be 8,000 persons per day, or 800 persons per hour. Since many jobs at the proposed project would provide employment for semi- and unskilled workers with low to moderate incomes, including minorities, most of the new jobs would be expected to be held by current San Francisco residents who are either unemployed or underemployed. The project would thus not be expected to attract new residents to San Francisco or generate new housing demand. These issues will not be discussed further in the EIR.

[1] Joe Smith, Pier 39, telephone conversation, 9/16/87.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

4. Transportation/Circulation. Could the project:	Yes	No	Discussed
*a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?	X	___	___
b. Interfere with existing transportation systems, causing substantial alterations to circulation patterns or major traffic hazards?	___	X	___
c. Cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity?	X	___	___
d. Cause a substantial increase in parking demand which cannot be accommodated by existing parking facilities?	X	___	___

A transportation study is being conducted for the project. Issues being examined include traffic, transit, parking and pedestrian impact resulting from the project and from cumulative development in the Northern Waterfront area. These issues will be analyzed in the EIR.

5. Noise. Could the project:	Yes	No	Discussed
*a. Increase substantially the ambient noise levels for adjoining areas?	___	X	X
b. Violate Title 24 Noise Insulation Standards if applicable?	___	X	X
c. Be substantially impacted by existing noise levels?	___	X	X

Project Operation

The noise environment of the site, like downtown San Francisco, is dominated by vehicular traffic noise. The Environmental Protection Element of the Master Plan indicates a day-night average noise level of 70 dBA in 1974, along the Embarcadero, adjacent to the project site and along North Point Street.[1] The nearest residences are approximately 800 feet south of the site on the south side of North Point Street.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The Environmental Protection Element of the Master Plan contains guidelines for determining the compatibility of various land uses with different noise environments. For commercial uses, the guidelines recommend an analysis of noise reduction requirements and inclusion of noise insulation features where there is an exterior noise environment above an Ldn of 70 dBA. The proposed structure would not include housing, so Title 24 Noise Standards would not be applicable.

The project's operation would not result in perceptibly greater traffic-related noise levels than those existing in the area. To produce a noticeable increase in environmental noise, a doubling of existing traffic volume would be required; traffic increases of this magnitude would not occur with anticipated cumulative development including the project.[2]

The project would be required to comply with the San Francisco Noise Ordinance, San Francisco Police Code Section 2909, "Fixed Source Noise Levels," which regulates mechanical equipment noise. The project site and the surrounding area is within a C-2 district. In this district, the ordinance limits equipment noise levels at the property line to 70 dBA between the hours of 7 a.m. and 10 p.m. and to 60 dBA between the hours of 10 p.m. and 7 a.m. Noise generating equipment on the project site would include two small ozone generators and two water pumps totaling 75 horsepower. During lulls in traffic, mechanical equipment generating 67 dBA could dominate the noise environment at the site. Because all mechanical equipment would operate day and night, the project engineer and architect would be required to include design features in the building to limit mechanical equipment noise levels to 60 dBA to meet the nighttime limit. Such noise levels would not result in a significant environmental impact. Discussion of operational and transportation-related noise will not be included in the EIR.

Construction Noise

Impacts of construction noise will be analyzed in the EIR.

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[1] dBA is a measure of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulates the response of the human ear to various sound frequencies.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

Ldn, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises; noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

[2]See San Francisco Department of City Planning Downtown Plan EIR (EE81.3), certified October 18, 1984, Vol. 1, Section IV.E. generally and Section IV.J., pp. IV.J.8-18, Increases of 1 dBA or less in environmental noise are not noticeable by most people outside a laboratory situation (National Academy of Sciences, Highway Research Board, Research Report No. 117 (1971)). (See also FHWA Highway Traffic Noise Prediction Model underlines, Report #FHWA-RD-77-108, December 1978, p. 8, regarding doubling of traffic volumes producing increases of 3 dBA or more, which are noticed by most people.)

	Yes	No	Discussed
6. Air Quality/Climate. Could the project:			
*a. Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?	X	___	X
*b. Expose sensitive receptors to substantial pollutant concentrations?	___	X	X
c. Permeate its vicinity with objectionable odors?	___	X	X
d. Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect public areas, or change the climate either in the community or region?	___	X	X

Two types of air quality impacts could be expected from the proposed project: long-term impacts related to use and operation, and short-term impacts from construction activity. Project-related and cumulative traffic may contribute to air pollution near the project sites and will be analyzed in the EIR.

Construction activities would temporarily affect local air quality. Particulates are generally the major source of construction air emissions. Demolition and construction activities would not involve burning of any materials and would not create objectionable odor. The construction of the project would not result in excavation or other soil disturbance with corresponding particulate generation. There will be no further discussion of construction-related air quality impacts in the EIR. A Mitigation Measure is included, see page 25.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The Sunlight access ordinance, Proposition K, is intended to protect sunlight on designated open spaces throughout San Francisco from one hour after sunrise to one hour before sunset. The closest park to the proposed project is the Chestnut/Kearny mini park which is approximately 1,250 feet to the south. The difference in height between ground level at the mini park and ground level adjacent to the proposed building is 20 feet. The longest shadow that would be cast by the proposed building during hours governed by Proposition K would occur on December 21 at 8:22 a.m. when the proposed project would cast a shadow of approximately 350 feet to the northwest. At no time would the proposed project cast any shadow on an open space protected under Proposition K. The proposed project would not increase wind accelerations in the project vicinity. These topics will not be discussed in the EIR.

	Yes	No	Discussed
7. Utilities/Public Services. Could the project:			
*a. Breach published national, state or local standards relating to solid waste or litter control?	___	X	___
*b. Extend a sewer trunk line with capacity to serve new development?	___	X	X
c. Substantially increase demand for schools, recreation or other public facilities?	___	X	___
d. Require major expansion of power, water, or communications facilities?	___	X	X

The proposed project would contribute to the cumulative demand for community services citywide. Cumulative impacts upon solid waste and waste water service providers have been analyzed in the Downtown Plan EIR and no significant impacts have been identified. The Downtown Plan EIR setting and impacts discussion for solid waste and waste water (Vol. 1, IV.F.1-2 & IV.F.8-10; Vol. 2, pp. A-7 & K.1-2; Vol. 3, pp. C&R F.1-4), is summarized below and incorporated by reference herein. Updated information on solid waste disposal is also include.

San Francisco's solid waste is currently disposed of at the Altamont Hills landfill under a contract which expires in 1988. The City recently entered into a contract with the Alameda County Solid Waste Management Authority and the Oakland Scavenger Company

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

to dispose of 15 million tons of solid waste at the Altamont Hills landfill beginning when the present contract expires. This is expected to serve the City's needs until 2009.

A sewer system is being built pursuant to the City's Clean Water Program. The system is intended to handle combined volumes of sewage and rainwater runoff. Since the capacity of the system is designed to handle rainwater flows (which can be 50 times the volume of regular sewage) additional development citywide would not affect operation of the sewer system.

Providers of all utilities and services have been contacted and have indicated that existing capacities are adequate to serve the proposed project. Statements from utility and service providers are available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, Sixth Floor. No further analysis is necessary in the EIR.

	Yes	No	Discussed
8. Biology. Could the project:			
*a. Substantially affect a rare or endangered species of animal or plant, or the habitat of the species?	___	X	X
*b. Substantially diminish habitat for fish, wildlife or plants, or interfere substantially with the movement of any resident or migratory fish or wildlife species?	X	___	X
c. Require removal of substantial numbers of mature, scenic trees?	___	X	X

The proposed project would discharge filtered aquarium water and backwash water into the Bay near the project site. Potential impacts on water quality and marine biology will be analyzed further in the EIR.

The project site is on Pier 39 and a portion of the Bay used for marina purposes. There are no rare or endangered species of plants or animals on the site. Street trees and other landscaping would be planted along the Embarcadero frontage of the site. No existing trees would be removed. The proposed project would not interfere with the movement of any resident or migratory birds. These issues will not be discussed further in the EIR.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

9. Geology/Topography. Could the project:	Yes	No	Discussed
*a. Expose people or structures to major geologic hazards (slides, subsidence, erosion and liquefaction)?	X	___	X
b. Change substantially the topography or any unique geologic or physical features of the site?	___	X	X

These issues will be discussed further in the EIR.

10. Water. Could the project:	Yes	No	Discussed
*a. Substantially degrade water quality, or contaminate a public water supply?	X	___	X
*b. Substantially degrade or deplete ground water resources, or interfere substantially with ground water recharge?	___	X	___
*c. Cause substantial flooding, erosion or siltation?	___	X	___

There is a permanent body of water partially covering the project site. The depth to water is approximately 10 feet below-grade, but varies with the Pacific tide. The site is also covered by paved roads and existing buildings. Run-off would continue to drain into the combined City storm/sewer system. The project would not affect ground water quality or the public water supply. The project would not result in additional flooding, erosion or siltation. There would be no dredging on the proposed site. These issues will not be discussed further in the EIR.

The project sponsor would be required to meet the water quality standards set by the Regional Water Quality Control Board for discharge into San Francisco Bay. The project impacts would be reviewed after the completion of the species list. The design of the aquarium outfall would include flow regulator or energy dissipation systems to prevent increased water turbidity. These issues related to water quality in the San Francisco Bay and effects on Bay marine life will be analyzed in the EIR.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

11. Energy/Natural Resources. Could the project:	Yes	No	Discussed
*a. Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner?	___	X	X
b. Have a substantial effect on the potential use, extraction, or depletion of a natural resource?	___	X	___

Annual energy consumption by the portion of Pier 39 to be removed has not been determined as separate metering for that section of the complex is not yet completed. Based on Title 24 maximum consumption, it is estimated that total annual energy consumption from the existing portion of the site is approximately 6 billion Btu.

Removal of the existing structure would require an unknown amount of energy. Fabrication and transportation of building materials, worker transportation, site development and building construction would require about eight billion Btu of gasoline, diesel fuel, natural gas and electricity.[1,2] Distributed over the estimated 50-year life of the project, this would be about 160 million Btu per year, or about 1.7% of annual building energy requirements.

New buildings in San Francisco are required to conform to energy conservation standards specified by Title 24 of the California Administrative Code. Documentation showing compliance with these standards is submitted with the application for the building permit and is enforced by the Bureau of Building Inspection.

Table 1, page 19, shows the estimated operational energy which would be used by the project. Project demand for electricity during PG&E's peak electrical load periods, July and August afternoons, would be about 200 kW, an estimated 0.0013% of PG&E's load of 16,000 MW.[3] Project demand for natural gas during PG&E's peak natural gas load periods, January mornings, would be 0.4 million Btu per day, or about .01% of PG&E's peak load of about 3.7 billion cubic feet per day.[4] Annual and peak daily electricity and natural gas consumption are shown in Figures 6 and 7, pages 20 and 21.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

TABLE 1

ESTIMATED PROJECT ENERGY USE FOR PIER 39 UNDERWATER WORLD

	Excluding Pump Energy (as per Title 24)[1]	Including Pump Energy
Daily Natural Gas Consumption[2]		
Estimated natural gas consumption per sq.ft.	130 Btu[3,4,5]	130 Btu
Estimated peak daily natural gas consumption	40.5 therms	40.5 therms
Monthly Electric Consumption[2]		
Estimated electrical consumption per sq.ft.	0.81 kWh	4 kWh
Estimated total electrical consumption	24,800 kWh (254 million Btu)	123,600 kWh (1.3 billion Btu)
Annual Consumption		
Estimated total annual natural gas consumption	1,470 therms	1,470 therms
Estimated total annual electrical consumption	255,500 kWh (2.6 billion Btu)	1,418,600 kWh (14.5 billion Btu)
Connected kilowatt load	105 kw	345 kw
Estimated total annual energy consumption	3.1 billion Btu (180 barrels of oil)	14.6 billion Btu (2,607 barrels of oil)

[1]Energy use includes space conditioning, service water heating and lighting in accordance with allowable limits under Title 24. This does not include the pumping and filtering of water. Pump energy is considered "source energy" and is not included in the "human comfort" calculations of Title 24.

[2]Water in the tanks will not be heated or cooled; it will remain at the ambient San Francisco Bay temperature. Energy for the tanks will be used for pumping and filtering of Bay water.

[3]Calculations done by Bruce Wallace Partners Ltd., Auckland N.Z. These calculations are available for review at the Office of Environmental Review, 450 McAllister Street, Sixth Floor, San Francisco, California.

[4]Btu (British thermal unit): A standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit (251.97 calories) at sea level.

[5]Energy Conversion Factors:

one gallon gasoline	=	125,000 Btu
one kilowatt (kW)	=	10,239 Btu
one therm	=	100,000 Btu
one barrel oil	=	5,600,000 Btu

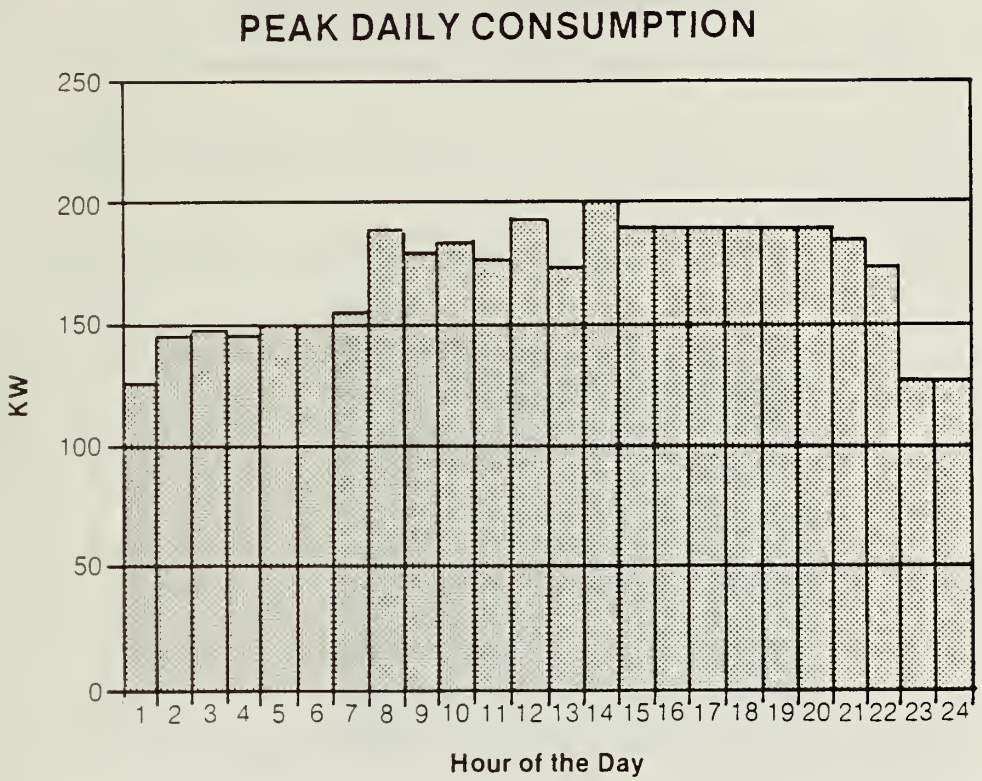
Source: EIP Associates; Bruce Wallace Partners Ltd., Auckland.

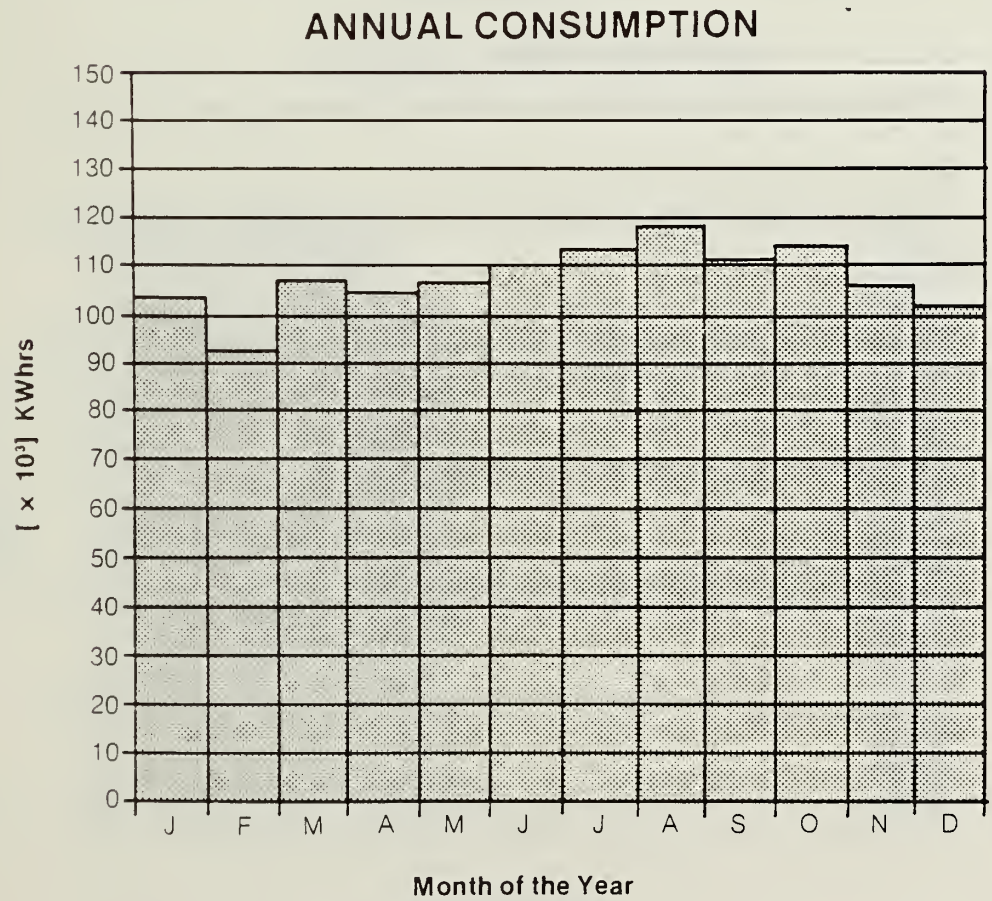
*Derived from State EIR Guidelines, Appendix G, normally significant effect.

ELECTRICITY DISTRIBUTION CURVES
PIER 39 UNDERWATER WORLD

FIGURE 4

SOURCE BRUCE WALLACE PARTNERS LIMITED



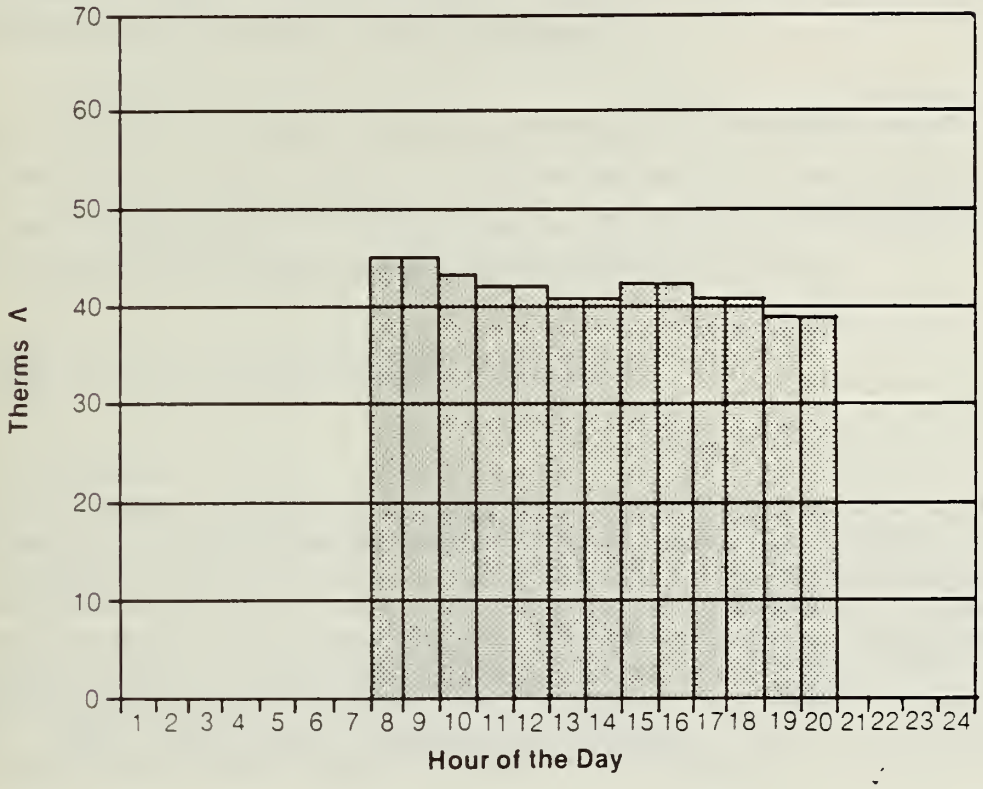


GAS DISTRIBUTION CURVES
PIER 39 UNDERWATER WORLD

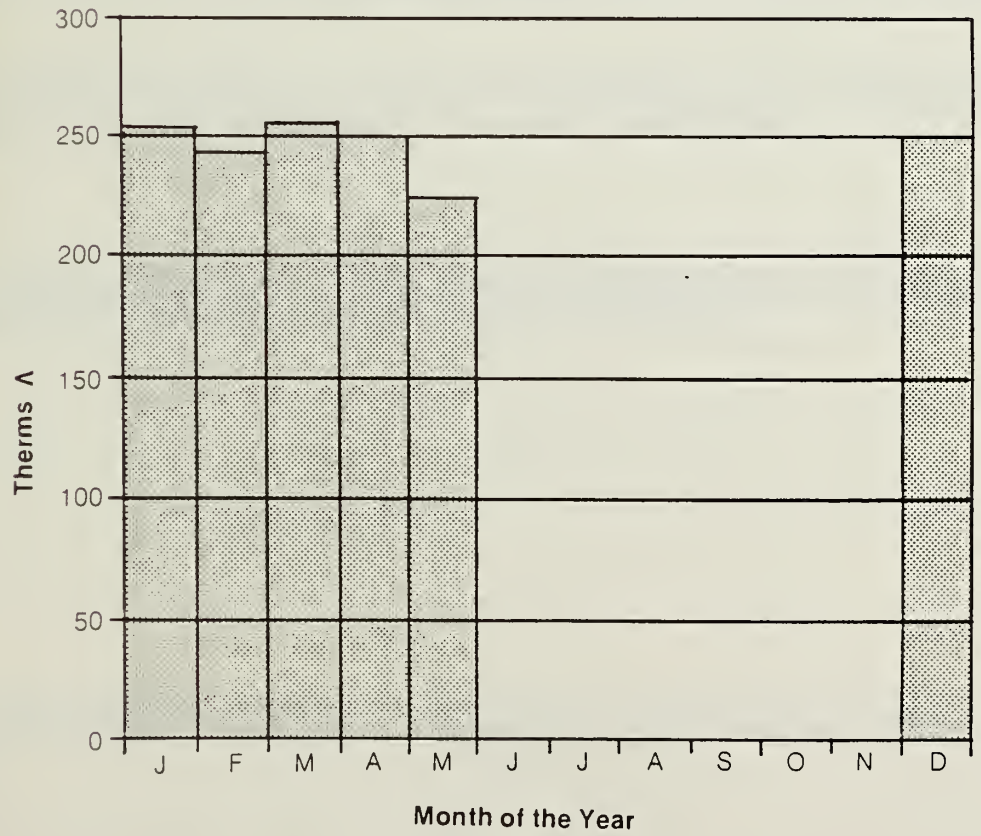
FIGURE 5

SOURCE BRUCE WALLACE PARTNERS LIMITED

PEAK DAILY CONSUMPTION



ANNUAL CONSUMPTION



San Francisco's electricity requirements would be about 5.0 billion kWh per year by 2000, about a 32% increase from 1984. Peak demand for the city would be about 1,000 MW, a 30% increase in 16 years. About 35 billion cu. ft. of natural gas would be consumed in the City annually by 2000, the same amount as in 1984.[5]

Increased San Francisco energy demands to the year 2000 would be met by PG&E from nuclear sources, oil and gas facilities, hydroelectric and geothermal facilities, and other sources such as cogeneration, wind and imports. PG&E plans to continue receiving most of its natural gas from Canada and Texas under long-term contracts.

These issues will not be discussed further in the EIR.

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[1]The British thermal unit (Btu) is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level. The term "at-source" means that adjustments have been made in the calculation of the thermal energy equivalent (Btu) for losses in energy that occur during generation, transmisstion, and distribution of the various energy forms as specified in: ERCDC, 1977 Energy Conservation Design Manual for New Non-Residential Buildings, Energy Conservation and Development Commission, Sacramento, California, and Apostolos, J.A., W.R. Shoemaker, and E.C. Shirley, 1978 Energy and Transportation System, California Department of Transportation, Sacramento, California, Project #20-7, Task 8.

[2]Hannon, B., et.al., 1978, "Energy and Labor in the Construction Sector," Science 202:837-847.

[3]San Francisco Department of City Planning, Downtown Plan Environmental Impact Report, EE81.3, certified October 18, 1984, Vol. 1, pp. IV.G.3-4.

[4]Ibid.

[5]San Francisco Department of City Planning, Downtown Plan Environmental Impact Report EE81.3, Certified October 18, 1984, Vol. 1, p. IV.G.12.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

12. Hazards. Could the project:	Yes	No	Discussed
*a. Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?	___	X	X
*b. Interfere with emergency response plans or emergency evacuation plans?	___	X	X
c. Create a potentially substantial fire hazard?	___	X	X

The project would not create a potential public health hazard through the production or disposal of harmful materials. Filtering materials would not be hazardous. Dylox, an organic phosphate, would be used a maximum of 3-4 times a year to treat parasites. This drug has a very short half-life, becoming inert ingredients in 4-5 days. Bacteria in the aquarium water would be treated with ozone (O_3), which quickly dissipates into oxygen. The ozone generating system for the proposed project would be a closed system in which incoming seawater would be pumped into an ozone contact chamber. The ozone would interact with the seawater, destroying bacteria and then rapidly reverting back to oxygen. This oxygen with any remaining traces of ozone would then be recycled back to the ozonator to be used again. The treated effluent, free of bacteria and ozone, would then be pumped into the aquarium tank. Ozone would be generated on site at the rate of 6 lbs of O_3/day using two separate 3 lb units. A small, electric driven air compressor would operate intermittently throughout the day..

An evacuation and emergency response plan would be developed as part of the proposed project (see D. Mitigation Measures, page 25). The project's emergency response plan would be coordinated with the City's emergency planning activities. The project would not create a substantial fire hazard because it would incorporate more extensive fire protection measures than most buildings in the area to comply with more stringent code standards now in effect. These issues will not be discussed in the EIR.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

13. Cultural. Could the project:	Yes	No	Discussed
*a. Disrupt or adversely affect a prehistoric or historic archaeological site or a property of historic or cultural significance to a community, ethnic or social group; or a paleontological site except as a part of a scientific study?	___	X	X
b. Conflict with established recreational, educational, religious or scientific uses of the area?	___	X	___
c. Conflict with the preservation of buildings subject to the provisions of Article 10 or Article 11 of the City Planning Code?	___	X	X

Pile driving for the project would occur in an unfilled portion of the Bay and would not disturb archaeological resources. The proposed project would not result in the demolition of any building rated for architectural or historical significance.

In an archaeological study conducted by Dr. Allen Pastron of Archeo-Tec, it was concluded that "planned construction related activities conducted in conjunction with the present project are not likely to result in adverse impacts to prehistoric archaeological resources." Given this, no additional archaeological procedures are recommended at this time. A copy of the study is on file and available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, Sixth Floor.

These issues will not be discussed further in the EIR.

C. OTHER. Could the project:	Yes	No	Discussed
Require approval of permits from City Departments other than Department of City Planning or Bureau of Building Inspection or from Regional, State or Federal Agencies?	X	___	X

The proposed project would require permits from the Bay Conservation and Development Commission, the Army Corps of Engineers and the Port of San Francisco. A permit from the Regional Water Quality Control Board may be required.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

D. MITIGATION MEASURES	Yes	No	N/A	Discussed
1. If any significant effects have been identified, are there ways to mitigate them?	X	__	__	X
2. Are all mitigation measures identified above included in the project?	X	__	__	X

MITIGATION MEASURES INCLUDED AS PART OF THE PROJECT

- An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project's plan, and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance of final building permits by the Department of Public Works.

- In order to reduce obtrusive light or glare, the project sponsor would use no mirrored glass on the building.

- The project sponsors would require the general contractors to maintain and operate construction equipment so as to minimize exhaust emissions of TSP and other pollutants, by such means as a prohibition of idling motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs (to reduce emissions) for equipment that would be in frequent use for much of the construction periods.

E. ALTERNATIVES

Alternatives to the proposed project to be analyzed in the EIR include the following:

A. No Project: The site would remain in its existing condition with all existing buildings remaining, or the project would be moved to another unspecified site, not necessarily within the City of San Francisco.

B. Different Waterfront Location: A project located in a freestanding building between Pier 39 and Pier 35.

C. No new fill on existing Pier 39.

D. New access to the existing Pier 39 garage at Stockton Street.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

F. MANDATORY FINDINGS OF SIGNIFICANCE	Yes	No	Discussed
*1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or pre-history?	___	X	___
*2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	___
*3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects.)	X	___	___
*4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___

G. ON THE BASIS OF THIS INITIAL STUDY:

___ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

___ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers __, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

X I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Barbara W. Sahm

BARBARA W. SAHM
Environmental Review Officer

for

Dean L. Macris
Director of Planning

Date: 1/27/87

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

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